COMOMAGINST 1514.1
N7
15 DEC 1999

COMOMAG INSTRUCTION 1514.1

Subj: COMMAND JOB QUALIFICATION REQUIREMENT (JQR) PROGRAM

Ref: (a) Underwater Mine Assembly Upgrade (NAVEDTRA 43318)

Encl: (1) JQR Listing

1. Purpose To promulgate policy on Job Qualification Requirements for the Mobile Mine Assembly Group personnel per reference (a).

2. Policy The JQR Program is a qualification system for enlisted personnel to perform certain duties. A JQR is a compilation of minimum knowledge and skills required qualifying for a specific watch station or job, maintaining specific equipment or performing as a team member within a unit. The JQR program is not designed as a training program, but provides many training objectives.

3. Objective The objectives of the JQR program are:

a. Enclosure (1) is a listing of JQR's that will standardize the level of training required for established fundamentals of safety, test equipment, material handling equipment, upgrade forms and underwater mine systems.

b. Provide a means that will successfully fulfill continuing career skills so individuals might best develop and use their talents while in the Navy.

4. Action

a. The Commanding Officer of each Mobile Mine Assembly Unit will appoint a coordinator for the Command JQR Program, (usually the Training Petty Officer). The Coordinator shall:

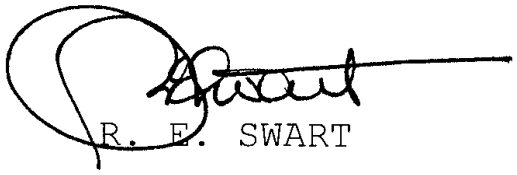
(1) Review JQR statistics quarterly, and identify any individual shortfalls or additional training requirements.

(2) Submit a memo to the Commanding Officer/Officer-in-Charge with an updated listing of completed JQR.

(3) Update the command JQR tracking board or training jacket.

(4) Set and maintain appropriate completion goals for their department and ensure that each member completes all required JQR's on schedule.

(5) At the completion of each area, submit a memo to the JQR Coordinator. Upon receipt of the memo, will do a service record entry of he completed JQR area.



R. E. SWART

Distribution: (COMOMAGINST 5216.1R)
List II

JQR EQUIPMENT

	TITLE	DATE STARTED	DATE COMPLETED
	SHOP EQUIPMENT		
1	Water Blaster		
2	Heat Sealer (Doughboy)		
3	Package Machine Operator		
4	Radial Arm Saw Operator		
5	Compressor		
6	Overhead Hoist & Gantry Crane Operator		
7	Paint Spray Booth Operator		
8	Sandblaster (Zero) Operator		
9	Drill Press Operator		
10	Gas Welder Operator		
11	Portable Arc Welder Operator		
12	Drill Sharpener Operator		
13	Weight Test Cage Operator		
14	Paslode Pneumatic Nailer		
	MINE ASSEMBLY		
15	MK 6 Mechanical Sweep Assembly		
16	MK 65 Laying Mine Assembly		
17	MK 62/63 Laying Mine Assembly		
18	VEMS MK 74-1 Assembly		
19	MK 91 Exercise Head Assembly		
20	MK 53 Battery Assembly		
21	MK 52/55 Actuation Mine Assembly		

FINAL QUALIFICATION AS WATER BLASTER

NAME _____ RANK/RATE_____

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QUALIFICATION

Having observe satisfactory performance, it is recommended the trainee be designated a qualified WATER BLASTER.

RECOMMENDED _____ DATE _____
(Supervisor)

RECOMMENDED _____ DATE _____
(Department Head)

RECOMMENDED _____ DATE _____
(Readiness Officer)

TRAINING RECORD ENTRY _____ DATE _____
(Training Petty Officer)

APPROVED _____ DATE _____
(Commanding Officer)

OPERATING INSTRUCTION FOR THE WATER BLASTER

I. Safety Procedures

NOTE: Access to the area shall be gained only after getting the Pump Operator/Safety Observer's attention. Do Not distract the operator of the gun.

A. Ensure individual is qualified to perform task assigned.
B. Ensure hearing protection warnings are posted around the area of operation.
C. Ensure water supply has been turned on.
D. Ensure hard hat, safety shoes, leather gloves, face shield, double hearing protection, and rain gear or long sleeves are worn.
E. Never leave system unattended while under pressure.
F. Never hold objects to be blasted manually
G. Never attempt to tighten or adjust hose nuts or connections under pressure.
H. Never operate while personnel are working in the area without proper personal protection equipment.

II. Daily check:

A. Inspect all hoses before and after use for leaks.
B. Check hose connections.
C. Check dump valve for proper operation.
D. Make sure shroud is on gun hose connection.
E. Use Operational Checklist.
F. If any unsafe conditions are found, notify supervisor immediately.

III. Operating Instructions:

A. Check controls for proper operations.
B. Pump Operator/Safety Observer shall not operate pump until told.
C. All pressure changes will be done slowly. Before blasting each day, pressure shall be brought up from zero to desired pressure.
D. After placing load in desired location, disconnect hoisting equipment, and if it's not going to be used again, raise above head striking level.

IV. Shut Down Procedures:

NOTE: Operations will stop if there are unauthorized personnel in the area, and if any safety hazard is detected.

A. Ensure there is no pressure left in nozzle.
B. Secure power before leaving for break or lunch.
C. Clear pool and deck of water and debris at the end of each day.

WATER BLASTER

1. Understand personnel safety equipment usage: hard hat, safety shoes, leather gloves, face shield, double hearing protection, and rain gear.
    Ref: Safety Procedures, Para. I.

Observed_____ Performed_____ Date_____

2. Understands equipment safety features.
    Ref: Safety Procedures, Para. I.

Observed_____ Performed_____ Date_____

3. Understands daily check procedures.
    Ref: Daily check, Para. II.

Observed_____ Performed_____ Date_____

4. Understands proper water blaster operation.
    Ref: Operating Instructions, Para. III.

Observed_____ Performed_____ Date_____

3. Understands proper water blaster shut-down procedures.
    Ref: Shut Down Procedures, Para. IV.

Observed_____ Performed_____ Date_____

FINAL QUALIFICATION AS HEAT SEALER (DOUGHBOY)

NAME _____ RANK/RATE_____

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QUALIFICATION

Having observe satisfactory performance, it is recommended the trainee be designated a qualified HEAT SEALER (DOUGHBOY).

RECOMMENDED _____ DATE _____
(Supervisor)

RECOMMENDED _____ DATE _____
(Department Head)

RECOMMENDED _____ DATE _____
(Readiness Officer)

TRAINING RECORD ENTRY _____ DATE _____
(Training Petty Officer)

APPROVED _____ DATE _____
(Commanding Officer)

OPERATING INSTRUCTIONS FOR THE HEAT SEALER (DOUGHBOY)

I. Safety Requirements:

NOTE:**__**WARNING**__** Personal injury may result if the following safety precautions are not observed.

A. Do not operate machine until instruction manual has been read.
B. Be sure machine is connected to building electrical safety ground.
C. Be sure power is off before performing machine maintenance or cleaning.
D. Do not operate machine whit guards removed.
E. Don not operate machine in a manner for which it was not intended.
F. Do not touch heated surfaces.

II. Preparation:

A. With the thermostat knob set in lowest position, plug the electrical cord into a PROPERLY GROUNDED 3-WIRE RECEPTACLE. As the thermostat is turned up, the pilot light will come on and the sealing bars will begin to heat. When the temperature for which the thermostat has been set is reached, the pilot light will go out. As the sealer is in operation, the pilot light will continue to go on and off. The toggle switch starts and stops the motor only. It is not necessary to turn this switch on to heat the sealing bars.

B. The numbers of the thermostat dial indicate temperature in hundreds of degrees. For example, No. 3 indicates approximately 300 degrees F (Fahrenheit) as indicated on the sealer's dial thermometer.

C. For heavy materials, such as "Scrimback", the temperature will be set approximately between 450 and 550 degrees F; for most coated papers, at about 350 degrees F; for cellophane, at 275 to 300 degrees F, depending on the thickness of the bags; for glassine at about 275 degrees F.

NOTE: **__**WARNING**__** When operating sealer, keep fingers and loose clothing away from feed-in area of sealer.

III. Operating Instructions:

A. Cut barrier bag to desires size for item to be packages.
B. Put the two cut ends together and run through the packaging machine.
C. Now seal either of the remaining ends.
D. Put object inside barrier bag.
E. Seal remaining end.
F. Cut small piece of barrier material from on of the corners.
G. Insert vacuum tube into hole and turn vacuum on. Ensure as much air as possible is extracted from package.
H. Quickly remove vacuum from package and run through machine again.

IV. Shut down procedures:

A. Turn toggle switch off.

B. Unplug machine.
C. Clean up you mess.
D. Stow sealer, scissors, markers, and related gear.

HEAT SEALER (DOUGHBOY)

1. Understands equipment requirements.
   Ref: Safety Requirements, Para. I.

Observed_____ Performed_____ Date_____

2. Understands preparation requirements.
   Ref: preparation, Para. II.

Observed_____ Performed_____ Date_____

3. Understands proper operating procedures.
   Ref: Operating Instructions, Para. III.

Observed_____ Performed_____ Date_____

4. Understands proper shut-down procedures.
   Ref: Shut Down Procedures, Para. IV.

Observed_____ Performed_____ Date_____

FINAL QUALIFICATION AS PACKAGE MACHINE OPERATOR

NAME _____ RANK/RATE_____

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QUALIFICATION

Having observe satisfactory performance, it is recommended the trainee be designated a qualified PACKAGE MACHINE OPERATOR.

RECOMMENDED _____ DATE _____
(Supervisor)

RECOMMENDED _____ DATE _____
(Department Head)

RECOMMENDED _____ DATE _____
(Readiness Officer)

TRAINING RECORD ENTRY _____ DATE _____
(Training Petty Officer)

APPROVED _____ DATE _____
(Commanding Officer)

OPERATING INSTRUCTIONS FOR THE HEAT SEALER PACKAGE MACHINE

I. Safety Procedures:
- A. Ensure individual is qualified to perform task assigned (PQS).
- B. Ensure all settings are properly adjusted (II-1).
- C. Ensure work pieces are properly secured, i.e. do not stack items to high.
- D. Stay clear of equipment during heating process. Heat is very intense.
- E. In case of an emergency situation, shut down equipment and notify supervisor (III-2).

II. Operating Instructions:
- A. Ensure the settings are as follows:
  - (1) Pre-Heat and Heat Hold are set between 7 & 8.
  - (2) Vac time is set at 3 o'clock position.
  - (3) Vac adjust is set on maximum position.
- B. Turn off/on switch to off position.
- C. Turn black handle located on right side of hinged cellophane loading frame. Lift up on handle.
- D. Run cellophane through opening on left side of frame and pull through so approximately 1/8" hangs over right side of frame.
- E. Close frame and return black handle to left or lock position.
- F. Cut cellophane free from roll as close to left side of bracket as possible.
- G. Turn off/on switch to on and press black "frame up" button and hold for 3 seconds. Frame will raise up.
- H. Place specially designed porous cardboard on porous vacuum surface colored side up.
- I. Place material to be packaged on top of porous cardboard.
- J. Press red cycle start button.
- K. Ensure cooling fans are operational.

III. Shut Down Procedures:
- A. Normal secure.
  - (1) Turn on/off switch to off.
  - (2) Clean entire unit/dust down heating elements.
- B. Emergency situation.
  - (1) Turn all variable settings to zero.
  - (2) Press cycle start. Once frame has returned home, start over at II.

HEAT SEALER PACKAGE MACHINE OPERATOR

1. Understands equipment requirements.
   Ref: Safety Procedures, Para. I.

Observed_____ Performed_____ Date_____

2. Understands operating requirements.
   Ref: Operating Instructions, Para. II.

Observed_____ Performed_____ Date_____

3. Understands shut-down procedures.
   Ref: Shut Down Procedures, Para. III.

Observed_____ Performed_____ Date_____

FINAL QUALIFICATION AS
RADIAL ARM SAW OPERATOR

NAME _____ RANK/RATE_____

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QUALIFICATION

Having observe satisfactory performance, it is recommended the trainee be designated a qualified RADIAL ARM SAW OPERATOR.

RECOMMENDED _____ DATE _____
(Supervisor)

RECOMMENDED _____ DATE _____
(Department Head)

RECOMMENDED _____ DATE _____
(Readiness Officer)

TRAINING RECORD ENTRY _____ DATE _____
(Training Petty Officer)

APPROVED _____ DATE _____
(Commanding Officer)

OPERATING INSTRUCTIONS FOR THE RADIAL ARM SAW

I. Safety Instructions:

A. Understands required safety equipment and practices. Page 4 of the Owners Manual.
B. Understands Radial Arm Saw operation (II-A).

II. Operating Instructions:

A. Read the owners manual and demonstrate a comprehensive knowledge of the operation of the Radial Arm Saw, including various settings.
B. Demonstrate on/off and emergency off procedures.

RADIAL ARM SAW OPERATOR

1. Understands personnel and equipment safety features.
   Ref: Safety Procedures, Para. I.

Observed_____ Performed_____ Date_____

2. Understands proper operating procedures.
   Ref: Operating Instructions, Para. II.

Observed_____ Performed_____ Date_____

FINAL QUALIFICATION FOR COMPRESSORS

NAME _____ RANK/RATE_____

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QUALIFICATION

Having observe satisfactory performance, it is recommended the trainee be designated a qualified COMPRESSORS.

RECOMMENDED _____ DATE _____
(Supervisor)

RECOMMENDED _____ DATE _____
(Department Head)

RECOMMENDED _____ DATE _____
(Readiness Officer)

TRAINING RECORD ENTRY _____ DATE _____
(Training Petty Officer)

APPROVED _____ DATE _____
(Commanding Officer)

OPERATING INSTRUCTIONS FOR COMPRESSORS

I. Safety Precautions
   A. Individual is qualified to perform task assigned, (PQS).
   B. Individual safety equipment used as required i.e.: ear muffs.
   C. Electrical circuit breaker operating properly.
   D. Ensure equipment within prescribed maintenance cycle.

II. Compressor Operation (start-up):
   A. Turn on lights located by door.
   B. Turn compressor LP-1 and LP-2 to AUTO.
   C. Wait for start up.

III. Shut-Down Procedures:
   A. Turn compressor LP-1 and LP-2 to OFF.
   B. Turn off lights by door.

COMPRESSORS

1. Proper personnel safety equipment usage: ear muffs.
   Ref: Safety Precautions, Para. I.

Observed_____ Performed_____ Date_____

2. Understands start-up procedures.
   Ref: Compressor Operation, Para. II.

Observed_____ Performed_____ Date_____

3. Understands shut-down procedures.
   Ref: Shut-Down Procedures, Para. III.

Observed_____ Performed_____ Date_____

FINAL QUALIFICATION AS
OVERHEAD HOIST AND GANTRY CRANES OPERATOR

NAME _____ RANK/RATE_____

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QUALIFICATION

Having observe satisfactory performance, it is recommended the trainee be designated a qualified OVERHEAD HOIST AND GANTRY CRANES OPERATOR.

RECOMMENDED _____ DATE _____
(Supervisor)

RECOMMENDED _____ DATE _____
(Department Head)

RECOMMENDED _____ DATE _____
(Readiness Officer)

TRAINING RECORD ENTRY _____ DATE _____
(Training Petty Officer)

APPROVED _____ DATE _____
(Commanding Officer)

OPERATING INSTRUCTION FOR THE OVERHEAD HOIST AND GANTRY CRANES

I. Safety Procedures:
- A. Ensure individual is qualified to perform task assigned (PQS).
- B. Ensure hoisting equipment is within weight test cycle.
- C. Ensure load is within hoisting equipment weight limitations.
- D. Ensure hard hat and safety shoes are worn.
- E. Ensure equipment within prescribed maintenance cycle
- F. Lift equipment only as high above deck as necessary.
- G. Ensure the load does not contact any obstructions.
- H. Never leave load suspended more that 6 inches above deck while unattended.
- I. Never lift a load over another person or mine case.

II. Daily check:
- A. Check controls for proper operations.
- B. While operating hoist, listen for unusual noises.
- C. Inspect all lifting cables and hoisting hook for cracks or other damage that would affect it’s function at the start of each shift.
- D. Check hoist break at least once each shift.
- D. If any unsafe conditions are found, notify supervisor immediately and remove hoist from service.

III. Operating Instructions:
- A. Check controls for proper operations.
- B. Attach prescribed lifting attachments to the hoist and the load to be lifted.
- C. Lift or lower load at a slow and steady speed by pressing the appropriate button on the hand-held control.
- D. After placing load in desired location, disconnect hoisting equipment, and if it’s not going to be used again, raise above head striking level.

IV. Shut Down Procedures:
- A. Ensure hoist hook is above head level.

NOTE: All repair work is to be done by Naval Weapons Station Charleston.

OVERHEAD HOIST AND GANTRY CRANES

1. Understand personnel safety equipment usage: hard-hats, steel toe shoes, gloves.
    Ref: Safety Procedures, Para. I.

Observed_____ Performed_____ Date_____

2. Understands equipment safety features.
    Ref: Safety Procedures, Para. I.

Observed_____ Performed_____ Date_____

3. Understands daily check procedures.
    Ref: Daily check, Para. II.

Observed_____ Performed_____ Date_____

4. Understands proper hoist operation.
    Ref: Operating Instructions, Para. III.

Observed_____ Performed_____ Date_____

3. Understands proper hoist shut-down procedures.
    Ref: Shut Down Procedures, Para. IV.

Observed_____ Performed_____ Date_____

FINAL QUALIFICATION AS PAINT SPRAY BOOTH OPERATOR

NAME _____ RANK/RATE_____

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QUALIFICATION

Having observe satisfactory performance, it is recommended the trainee be designated a qualified PAINT SPRAY BOOTH OPERATOR.

RECOMMENDED _____ DATE _____
(Supervisor)

RECOMMENDED _____ DATE _____
(Department Head)

RECOMMENDED _____ DATE _____
(Readiness Officer)

TRAINING RECORD ENTRY _____ DATE _____
(Training Petty Officer)

APPROVED _____ DATE _____
(Commanding Officer)

OPERATING INSTRUCTION FOR THE PAINT BOOTH, PAINT POT, AND SPRAY GUNS

I. Safety Precautions:

A. Individual is qualified to perform task assigned. (PQS).
B. Personnel safety equipment used as required, i.e.; respirator, goggles, coveralls, and gloves.
C. Equipment safety devices operating properly, i.e.; automatic shut-off doors. Sprinkler system heads clear of obstructions, and the electrical main breaker box operating properly.
D. Proper air pressure setting.
E. Ensure equipment within prescribed maintenance cycle.
F. Inspect air lines and regulators.

II. Start-up Procedures:

A. Paint Booth:
   (1) Ensure all safety precautions are adhered to.
   (2) Turn on paint booth, press start switch.
   (3) Close Doors.

B. Painting Equipment (paint pot).
   (1) Remove pot cover and install paint container.
   (2) Replace pot cover and tighten down securely.
   (3) Regulate air source to manufacturers specifications.
   (4) Connect regulated air supply to paint pot.
   (5) Regulate pot pressure to manufacturers specifications.
   (6) Adjust paint stirring motor to desired speed.
   (7) Regulate air supply to fun from pot to manufacturer’s specifications.
   (8) Operate/regulate spray for proper spray pattern.

C. Painting equipment (spray guns, small cup).
   (1) Regulate air source to manufacturers specifications.
   (2) Fill paint cup 3/4 full with premixed paint.
   (3) Securely fasten cup to gun.
   (4) Connect gun to regulate air supply.
   (5) Operate/regulate spray gun for proper spray pattern.

D. Paint Mixing Instructions:
   (1) EXAMPLE: For black, orange, olive drab, and white colors only.
   1/2 gal (one of the above color paints)
   1/2 gal thinner

   (2) Gold paint (use as is).
   (3) All other colors mix in accordance with manufacturer’s instructions.

III. Shut-Down Procedures:

A. Painting equipment (paint pot/spray guns).
   (1) Turn air supply to pot off.
   (2) Bleed air pressure from pot (allow all air to escape).
   (3) Loosen and remove pot cover.
   (4) Clean all paint or thinner from inside pot container.
   (5) Pour fresh thinner into pot container.
   (6) Replace pot cover and pressurize pot, spray thinner through system by operating spray gun.
   (7) Repeat steps 2, 3, and 4.
   (8) Replace pot covering (without securing).

B. Paint Booth
   (1) Sweep down walls, ceiling, and deck with fox tail.
   (2) Return all flammable liquids to proper storage areas.
   (3) Secure lights and close doors.

PAINT SPRAY BOOTH OPERATOR

1. Understands proper personnel safety equipment usage: respirator, goggles, coveralls, and gloves.
    Ref: Safety Precautions, Para. I.

Observed_____ Performed_____ Date_____

2. Understands equipment safety features.
    Ref: Safety Precautions, Para. I.

Observed_____ Performed_____ Date_____

3. Understands paint booth start-up procedures.
    Ref: Start-up Procedures, Para. II Step A.

Observed_____ Performed_____ Date_____

4. Understands paint equipment (paint pot/paint spray-guns) operating procedures.
    Ref: Start-up Procedures, Para. II Step B & C.

Observed_____ Performed_____ Date_____

5. Understands proper mixing instructions for paints.
    Ref: Start-up Procedures, Para. II Step D.

Observed_____ Performed_____ Date_____

6. Understands paint equipment (paint pot/paint spray-gun) daily shut-down procedures.
    Ref: Shut Down Procedures, Para. III Step A.

Observed_____ Performed_____ Date_____

7. Understands paint booth shut-down procedures.
    Ref: Shut-Down Procedures, Para. III Step B.

Observed_____ Performed_____ Date_____

FINAL QUALIFICATION AS SANDBLASTER (ZERO) OPERATOR

NAME _____ RANK/RATE_____

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QUALIFICATION

Having observe satisfactory performance, it is recommended the trainee be designated a qualified SANDBLASTER (ZERO) OPERATOR.

RECOMMENDED _____ DATE _____
(Supervisor)

RECOMMENDED _____ DATE _____
(Department Head)

RECOMMENDED _____ DATE _____
(Readiness Officer)

TRAINING RECORD ENTRY _____ DATE _____
(Training Petty Officer)

APPROVED _____ DATE _____
(Commanding Officer)

OPERATING INSTRUCTION FOR THE SANDBLASTER (ZERO)

I. Individual Safety Requirements:

A. Operator and personnel within 15 feet must wear ear protection.
B. Operator must wear a dust respirator, i.e. surgeon’s mask.
C. Never open sandblaster doors when in operation.
D. Ensure doors are secured when using high pressure air to remove dust from material.
E. Never weigh down foot control with anything except your foot.
F. Add grit only when sandblaster is shut down.

II. Sandblaster Safety Features:

A. Protective gloves and sleeves.
B. Foot control for sandblasting grit.
C. Automatic grit shut-off if door is opened.
D. Safety glass.

III. Start-Up Procedures:

A. Ensure blaster is full of grit (visual inspection of container).
B. Ensure safety features of blaster are in good working condition.
C. Ensure dust reclaimer is empty.
D. Ensure individual safety requirements are adhered to.
E. Ensure blaster has valid ground safety sticker attached.
F. Ensure grit is dry.
G. Ensure no small items are caught in reclaimer screen.
H. Place “on/off” switch to “off” position.
I. Connect power cord to 110 VAC power source.
J. Inspect air hose and connectors for damage.
K. Connect air supply, adjust to 90 PSI.
L. Place “on/off” switch to “on” position.

IV. Sandblaster Operation:

A. Small material that could fall through reclaiming screens must be placed in a can during blasting.
B. All material to be blasted must be free of grease.
C. Never blast wet material.
D. Do not sand blast any soft material such as fiberglass or plastic.
E. Discontinue sandblasting operations if blaster is not operating properly.
F. Constantly check that the blaster has grit.

V. Shut-Down Procedures:

A. Place “on/off” switch to “off” position.

B. Disconnect air supply.
C. Empty dust reclaimer.
D. Fill blaster with grit.
E. Remove all material from inside of blaster.
F. Ensure no small items are caught in reclaimer screen.
G. Dust inside and out side of blaster.

SANDBLASTER (ZERO) OPERATOR

1. Understands personnel safety requirements.
   Ref: Individual Safety Requirements, Para. I.

Observed_____ Performed_____ Date_____

2. Understands equipment safety features.
   Ref: Sandblaster Safety Features, Para. II.

Observed_____ Performed_____ Date_____

3. Understands start-up procedures.
   Ref: Start-Up Procedures, Para. III.

Observed_____ Performed_____ Date_____

4. Understands proper sandblaster operation.
   Ref: Sandblaster Operation, Para. IV.

Observed_____ Performed_____ Date_____

5. Understands proper shut-down procedures.
   Ref: Shut Down Procedures, Para. IV.

Observed_____ Performed_____ Date_____

FINAL QUALIFICATION AS DRILL PRESS OPERATOR

NAME _____ RANK/RATE_____

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QUALIFICATION

Having observe satisfactory performance, it is recommended the trainee be designated a qualified DRILL PRESS OPERATOR.

RECOMMENDED _____ DATE _____
(Supervisor)

RECOMMENDED _____ DATE _____
(Department Head)

RECOMMENDED _____ DATE _____
(Readiness Officer)

TRAINING RECORD ENTRY _____ DATE _____
(Training Petty Officer)

APPROVED _____ DATE _____
(Commanding Officer)

OPERATING INSTRUCTIONS FOR THE DRILL PRESS

I. Safety Procedures:

A. Ensure individual is qualified to perform task assigned.
B. Ensure individual safety equipment is used.
C. Ensure equipment safety devices are operating properly.
D. Ensure work piece is secured properly.
E. Ensure area around drill press is free of unnecessary material.
F. In any emergency situation, shut down the equipment and notify the supervisor.

II. Operating Instructions:

A. Unplug drill press.
B. Ensure all guards are in place.
C. Operate drill press and observe all moving parts to ensure proper function.
D. Position drill head and work plate properly for task to be accomplished.
E. Select proper drill bit and install in spindle, tighten with chuck key.
F. Position work piece under drill head and secure properly.
G. Plug in power cord.
H. Switch “on/off” switch to “on” (drill spindle begins turning).
I. Lower spindle by slowly pulling handle located on right side of drill head.
J. Drill to prescribed depth. Release handle slowly allowing spindle to return to normal position.
K. Switch “on/of” switch to “off” to stop spindle rotation.
L. Remove work piece from under drill head.

III. Shut-Down Procedures:

A. Unplug drill press.
B. Clean all metal shavings and lubricants from press drill bit, and surrounding area.
C. Remove drill bit.

DRILL PRESS OPERATOR

1. Understands personnel safety requirements.
   Ref: Safety Procedures, Para. I.

Observed_____ Performed_____ Date_____

2. Understands equipment safety features.
   Ref: Safety Procedures, Para. I.

Observed_____ Performed_____ Date_____

3. Understands proper drill press operation.
   Ref: Operating Instructions, Para. II.

Observed_____ Performed_____ Date_____

4. Understands proper shut-down procedures.
   Ref: Shut Down Procedures, Para. III.

Observed_____ Performed_____ Date_____

FINAL QUALIFICATION AS GAS WELDER OPERATOR

NAME _____ RANK/RATE_____

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QUALIFICATION

Having observe satisfactory performance, it is recommended the trainee be designated a qualified GAS WELDER OPERATOR.

RECOMMENDED _____ DATE _____
(Supervisor)

RECOMMENDED _____ DATE _____
(Department Head)

RECOMMENDED _____ DATE _____
(Readiness Officer)

TRAINING RECORD ENTRY _____ DATE _____
(Training Petty Officer)

APPROVED _____ DATE _____
(Commanding Officer)

OPERATING INSTRUCTIONS FOR THE GAS WELDER (CUTTING TORCH)

I. Safety Procedures:

A. Ensure individual is qualified to perform task assigned.
B. Fittings and hoses are in good condition.
C. Personnel safety equipment usage i.e. welding/cutting goggles, apron and gloves properly worn and in good condition.
D. Adequate ventilation in welding/cutting area.
E. Proper pressure in oxygen/acetylene tanks.
F. Tanks are properly contained and will not tip over.
G. Area is clear of flammable material i.e. rags, paper, thinners, and paints.
H. Fire watch and fire extinguisher in immediate area of welding/cutting operations.

II. Start Up Procedures:

A. Ensure all safety precautions are adhered to.
B. Check welding/cutting tips for slag that will impede gas flow.
C. Inspect, and then connect hoses to appropriate bottles i.e. green-oxygen, red-acetylene.
D. Connect torch to proper hose markings.
E. Turn oxygen bottle valve fully counterclockwise to open. Turn acetylene bottle valve 1/4 turn counterclockwise to open.
F. Adjust regulators (oxygen-30 PSI, acetylene-7 PSI).
G. Adjust acetylene to torch, light with sparker and adjust oxygen so that welding/cutting tip shows approximately 1/4 inch blue flame.

III. Shut Down Procedures:

A. Close valves on torch.
B. Close bottle’s valves fully clockwise.
C. Adjust regulators on bottles (turn fully clockwise, then counter-clockwise).
D. Bleed hoses by opening valves on torch, close after bleeding.
E. Sweep cart and wipe equipment down.

GAS WELDER OPERATOR

1. Understands equipment safety features: welding helmet, apron, gloves
   Ref: Safety Procedures, Para. I.

Observed_____ Performed_____ Date_____

2. Understand duties as fire watch during welding.
   Ref: Safety Procedures, Para. I.

Observed_____ Performed_____ Date_____

3. Understands safety precautions.
   Ref: Safety Procedures, Para. I.

Observed_____ Performed_____ Date_____

4. Understands proper start up procedures.
   Ref: Start Up Procedures, Para. II.

Observed_____ Performed_____ Date_____

5. Understands proper shut-down procedures.
   Ref: Shut Down Procedures, Para. III.

Observed_____ Performed_____ Date_____

FINAL QUALIFICATION AS PORTABLE ARC WELDER OPERATOR

NAME _____ RANK/RATE_____

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QUALIFICATION

Having observe satisfactory performance, it is recommended the trainee be designated a qualified PORTABLE ARC WELDER OPERATOR.

RECOMMENDED _____ DATE _____
(Supervisor)

RECOMMENDED _____ DATE _____
(Department Head)

RECOMMENDED _____ DATE _____
(Readiness Officer)

TRAINING RECORD ENTRY _____ DATE _____
(Training Petty Officer)

APPROVED _____ DATE _____
(Commanding Officer)

OPERATING INSTRUCTIONS FOR THE PORTABLE ARC WELDER

I. Safety Procedures:

A. Ensure individual is qualified to perform task assigned.
B. Cables and electrodes are in good condition.
C. Personnel safety equipment usage i.e. welding/cutting goggles, apron and gloves properly worn and in good condition.
D. Adequate ventilation in welding area.
E. Proper settings made on equipment.
F. Equipment within prescribed maintenance cycle.
G. Electrodes are not touching together, prior to starting.
H. Fire watch and fire extinguisher in immediate area of welding operations.

II. Start Up Procedures:

A. Ensure all safety precautions are adhered to.
B. Switch “on/off” switch to “on”.
C. Switch idle/auto-idle” switch to auto-idle”.
D. Pull out choke.
E. Depress start switch.
F. Return choke to normal position after warm-up.
G. Switch “weld/generator” switch to “generator”. If generator only is to be used, then disregard steps H through J.
H. Switch “weld/generator” switch to “weld”.
I. Make proper settings on equipment for material being welded.
J. Attach ground lead to material being welded.

III. Shut Down Procedures:

A. Switch “on/off” switch to “off”.
B. Return electrodes to proper storage location on chart.
C. Clean up welding area and welding cart.
D. Place equipment out of the weather.
E. Properly store welding tools and material.

PORTABLE ARC WELDER OPERATOR

1. Understands equipment safety features: welding helmet, apron, gloves
   Ref: Safety Procedures, Para. I.

Observed_____ Performed_____ Date_____

2. Understand duties as fire watch during welding.
   Ref: Safety Procedures, Para. I.

Observed_____ Performed_____ Date_____

3. Understands safety precautions.
   Ref: Safety Procedures, Para. I.

Observed_____ Performed_____ Date_____

4. Understands proper start up procedures.
   Ref: Start Up Procedures, Para. II.

Observed_____ Performed_____ Date_____

5. Understands proper shut-down procedures.
   Ref: Shut Down Procedures, Para. III.

Observed_____ Performed_____ Date_____

FINAL QUALIFICATION AS PORTABLE GENERATOR OPERATOR

NAME _____ RANK/RATE_____

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QUALIFICATION

Having observe satisfactory performance, it is recommended the trainee be designated a qualified PORTABLE GENERATOR OPERATOR.

RECOMMENDED _____ DATE _____
(Supervisor)

RECOMMENDED _____ DATE _____
(Department Head)

RECOMMENDED _____ DATE _____
(Readiness Officer)

TRAINING RECORD ENTRY _____ DATE _____
(Training Petty Officer)

APPROVED _____ DATE _____
(Commanding Officer)

OPERATING INSTRUCTIONS FOR THE PORTABLE GENERATOR

I. Safety Instructions:

A. Gasoline and other fuels always present a hazard of possible explosion or fire
- Do not smoke or use open flame near the alternator set or fuel tank.
- Keep a fire extinguisher nearby.

B. Exhaust fumes are poisonous if inhaled.
- Ensure operating area is well ventilated.

C. The output power voltage present in this equipment can cause fatal electric shock.
- Guard against electric shock.
- Avoid contact with live terminals or receptacles.
- Use extreme care if operating this unit in rain or snow.
- Only use three-prong grounded receptacles and tree-wire extension cords.
- This unit must be properly grounded.

D. Hot engine parts, moving parts and the output of the alternator set could cause serious injury to the operator.
- Keep all safety guards and power shield in position and tightly secured.
- Do not wear neckties or loose shirts, jackets, or sleeves that may become caught in moving parts.

E. Only a qualified technician should perform repairs on this equipment.

F. Poor housekeeping creates a fire hazard.
- Remove all oil deposits and accumulated dirt.

G. Lead-acid batteries emit explosive hydrogen gas when being charged.
- Do not smoke while servicing battery.
- Do not disconnect battery cables on electric start models from battery while the unit is cranking or running. Sparks may cause an explosion.
- Battery acid can cause severe burns and eye damage. Use extreme care when handling or servicing the battery.

II. Operating Instructions:

CAUTION: Before operating the generator, especially in sandy, muddy, wet, or snowy area, place the unit on plywood or any other suitable firm dry surface. Also, generator and generator vent holes must be kept clean at all times to assure proper operation.

A. Pre-Start: Read the engine maintenance section of the engine manual that comes with the unit before starting or servicing the engine.

B. Unit Grounding: There is a ground screw located near the outlet receptacles. A stranded ground wire shall be connected between this ground screw and a suitable ground.

C. Applying the Load: allow the engine to reach normal operating temperature (two to three minutes) before connecting a heavy load. Keep the load within the specification rating.

D. The ampere and voltage rating of items to be powered by this alternator can be found on the nameplate of the electric tool or appliance. Se “Wattage Requirements” in the owners manual.

E. The total output rating of the alternator always refers to the highest voltage the unit is equipped to produce. On 120/240 volt units, this would be 240 volts. To determine the total 120 volt ampere rating, double the 240 volt amperage provided in the specification table.

F. Connect the load by inserting the plugs into the proper output receptacles. Multiple loads should be applied gradually. If the load consists of large electric motors, they should be individually started, the largest first; then other low demand items can be added to the load.

DO NOT INCREASE ENGINE SPEED TO GET MORE OUTPUT FROM ALTERNATOR. ENGINE WILL OPERATE AT 3600 RPM FULL RATED LOAD.

G. Disconnecting the Load: The engine governor will compensate for load variations; therefore, the load can be disconnected in any desired sequence. It is desirable to gradually remove the load if possible.

PORTABLE GENERATOR OPERATOR

1. Understands personnel safety requirements.
   Ref: Safety Instructions, Para. I.

Observed_____ Performed_____ Date_____

2. Understands equipment safety features.
   Ref: Safety Procedures, Para. I.

Observed_____ Performed_____ Date_____

4. Understands proper generator operation.
   Ref: Operating Instructions, Para. III.

Observed_____ Performed_____ Date_____

3. Understands proper shut-down procedures.
   Ref: Shut Down Procedures, Para. IV.

Observed_____ Performed_____ Date_____

FINAL QUALIFICATION AS DRILL SHARPENER OPERATOR

NAME _____ RANK/RATE_____

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QUALIFICATION

Having observe satisfactory performance, it is recommended the trainee be designated a qualified DRILL SHARPENER OPERATOR.

RECOMMENDED _____ DATE _____
(Supervisor)

RECOMMENDED _____ DATE _____
(Department Head)

RECOMMENDED _____ DATE _____
(Readiness Officer)

TRAINING RECORD ENTRY _____ DATE _____
(Training Petty Officer)

APPROVED _____ DATE _____
(Commanding Officer)

OPERATING INSTRUCTIONS FOR THE DRILL BIT SHARPENER

I. Safety Procedures:
   A. Ensure individual is qualified to perform task assigned.
   B. Ensure individual safety equipment is used.
   C. Ensure equipment safety devices are operating properly.
   D. Ensure area around sharpener is free of unnecessary material.
   E. In any emergency situation, shut down the equipment and notify the supervisor.

II. Operating Instruction:
   A. Ensure “on/off” switch is in the “off” position and wheels rotate freely.
   B. Insert plug into receptacle and turn “on/off” switch to the “on” position. Note: Grinder should come up to speed smoothly and without vibration.
   C. Adjust tool rest supports to 1/16” clearance of wheel.
   D. Operate IAW pages 3-6 of the owners manual.
   E. Upon completion, turn “on/off” switch to “off” position.

DRILL SHARPENER OPERATOR

2. Understands personnel and equipment safety features.
   Ref: Safety Procedures, Para. I.

Observed_____ Performed_____ Date_____

4. Understands proper drill sharpener operation.
   Ref: Operating Instructions, Para. II.

Observed_____ Performed_____ Date_____

FINAL QUALIFICATION AS
WEIGHT TEST CAGE OPERATOR

NAME _____ RANK/RATE_____

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QUALIFICATION

Having observe satisfactory performance, it is recommended the trainee be designated a qualified WEIGHT TEST CAGE OPERATOR.

RECOMMENDED _____ DATE _____
(Supervisor)

RECOMMENDED _____ DATE _____
(Department Head)

RECOMMENDED _____ DATE _____
(Readiness Officer)

TRAINING RECORD ENTRY _____ DATE _____
(Training Petty Officer)

APPROVED _____ DATE _____
(Commanding Officer)

OPERATING INSTRUCTIONS FOR THE WEIGHT TEST CAGE

I. Safety Procedures:
   A. Ensure individual is qualified to perform task assigned.
   B. Ensure individual safety equipment is used.
   C. Ensure “Weight Test In Progress” sign is used.
   D. Ensure work area is free of unnecessary material.
   E. In any emergency situation, secure operation and notify the supervisor.
   F. Endure that cage is in weight test.

II. Operating Instructions:
   A. Visually inspect items to be tested per Reference (a).
   B. Conduct load test per Reference (b).

III. Shut Down Procedures:
   A. Remove all gear utilized to conduct test.
   B. Ensure cage is clean.
   C. Lock cage door.

WEIGHT TEST CAGE OPERATOR

1. Understands personnel safety requirements.
   Ref: Safety Procedures, Para. I.

Observed_____ Performed_____ Date_____

2. Understands equipment safety features.
   Ref: Safety Procedures, Para. I.

Observed_____ Performed_____ Date_____

3. Understands proper weight test cage operation.
   Ref: (a) NAVSEA OP 5 VOL. 1 CHAP 8
   (b) NAVSEA OP SG420-AP-MMA-010
   (c) Operating Instructions, Para. II.

Observed_____ Performed_____ Date_____

4. Understands proper shut-down procedures.
   Ref: Shut Down Procedures, Para. III.

Observed_____ Performed_____ Date_____

FINAL QUALIFICATION AS PASLODE PNEUMATIC NAILER

NAME _____ RANK/RATE_____

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QUALIFICATION

Having observe satisfactory performance, it is recommended the trainee be designated a qualified PASLODE PNEUMATIC NAILER.

RECOMMENDED _____ DATE _____
(Supervisor)

RECOMMENDED _____ DATE _____
(Department Head)

TRAINING RECORD ENTRY _____ DATE _____
(Training Petty Officer)

APPROVED _____ DATE _____
(Commanding Officer)

OPERATING INSTRUCTIONS FOR THE PASLODE PNEUMATIC NAILER

I. Safety Procedures:

A. Operator must describe and understand process of safety mechanism on Paslode pneumatic nailer.

_____
(Signature) (Date)

B. Operator must inspect all equipment for fatigue or failure.

_____
(Signature) (Date)

C. Operator must list all PPE to be used during nail gun evolution's.

_____
(Signature) (Date)

D. Operator must demonstrate competency during operations with Paslode pneumatic nailer.

_____
(Signature) (Date)

II. Equipment:

A. Operator must list equipment needed for operation of the Paslode pneumatic nailer.

_____
(Signature) (Date)

III. Operations:

A. Operator must prepare nail gun for upcoming task.

(1) Oiling Paslode pneumatic nailer.

_____
(Signature) (Date)

(2) Loading nails into Paslode pneumatic nailer.

_____

(Signature) (Date)

(3) Connecting airlines to Paslode pneumatic nailer.

_____

(Signature) (Date)

B. Operator must demonstrate use of Paslode pneumatic nailer.

_____

(Signature) (Date)

IV. Maintenance:

A. Operator must perform maintenance IAW Paslode pneumatic nailer owners manual.

_____

(Signature) (Date)

FINAL QUALIFICATION AS
MK 6 MECHANICAL SWEEP MINE ASSEMBLER

NAME _____ RANK/RATE_____

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QUALIFICATION

Having observe satisfactory performance, it is recommended the trainee be designated a qualified MK 6 MECHANICAL SWEEP MINE ASSEMBLER.

RECOMMENDED _____ DATE _____
(Supervisor)

RECOMMENDED _____ DATE _____
(Department Head)

RECOMMENDED _____ DATE _____
(Readiness Officer)

TRAINING RECORD ENTRY _____ DATE _____
(Training Petty Officer)

APPROVED _____ DATE _____
(Commanding Officer)

A. Case Preparation (Job Sheet 12-4)

Complete the following task:

1. Remove extender and firing mechanism well covers and clean flanges with solvent

Observed_____ Date_____

2. Verify case does not exhibit external damage that would affect fit or function.

Observed_____ Date_____

3. Replace horn plug and torque to 20-25 lb-ft

Observed_____ Date_____

4. Install new gaskets on extender and firing mechanism wells and torque covers to 18 lb-ft.

Observed_____ Date_____

5. Verify identification markings in accordance with SW550-AE-MMI-010.

Observed_____ Date_____

6. Stencil local mine number in 4-inch characters between lifting eyes and firing mechanism well.

Observed_____ Date_____

B. PLUMMET PREPARATION (JOB SHEET 12-1)

Complete the following task:

1. Referring to mission planning directives, cut wire rope length equal to requested mooring depth plus 4 feet.

Observed_____ Date_____

2. Solder wire rope on plummet spool and install.

Observed_____ Date_____

3. Stencil arrow indicating direction of spool rotation on upper half of each plummet side plate. Stencil mooring depth on upper half of front and back of plummet.

Observed_____ Date_____

4. Perform plummet brake tension test.

Observed_____ Date_____

C. PLUMMET RELEASE TEST (JOB SHEET 12-2)

Complete the following task:

1. Remove side plates and weigh anchor ensuring it falls within 796 and 836 lbs.

Observed_____ Date_____

2. Verify anchor wheels turn freely.

Observed_____ Date_____

3. Raise anchor off deck to allow testing.

Observed_____ Date_____

4. Disassemble dashpot and verify piston orifice is open and strainer is free of dirt.

Observed_____ Date_____

5. Clean interior of dashpot and verify piston orifice is open and strainer is free of dirt.

Observed_____ Date_____

6. Perform plummet release test.(plummet must release between 6 and 10 Seconds.

Observed_____ Date_____

7. Stencil plummet end of anchor over dashpot as follow:
   PTS ANTI- FREEZE
   PTS WATER

Observed_____ Date_____

8. Enter proportional part of antifreeze and water on master record Sheet.

Observed_____ Date_____

D. ANCHOR PREPARATION (JOB SHEET 12-3)

Complete following task:

1. Perform pawling adjustment.

Observed_____ Date_____

2. Perform brake tension adjustment.

Observed_____ Date_____

3. Perform plummet installation.

Observed_____ Date_____

4. Perform hold-off gear setting.

Observed_____ Date_____

5. Torque castellated nut to 20-25 lb-ft.

Observed_____ Date_____

6. Stencil "HOLD-OFF NUT 4 TURNS" on left side of anchor.

Observed_____ Date_____

7.Install parachute.

Observed_____ Date_____

E. CASE AND ANCHOR MARRIAGE (JOB SHEET 12-5)

Compete the following task:

1. Inspect link securing hooks for servicability.

Observed_____ Date_____

2. Lift case above anchor and attach shackle of mooring line to case mooring eye.

Observed_____ Date_____

3. Marry case and anchor.

Observed_____ Date_____

4. Torque hexbody of turnbuckle to 12-18 lb-ft

Observed_____ Date_____

5. Ensure case is securely seated on anchor.

Observed_____ Date_____

F. FINAL PREPARATION FOR DELIVERY (JOB SHEET 12-6)

Complete following task:

1. Ensure slip hook is installed properly on anchor.

Observed_____ Date_____

2. Verify red warning tag are installed on fifth wheel and wood Chock in plummet.

Observed_____ Date_____

3. Verify turnbuckle and case securing links are properly installed.

Observed_____ Date_____

4. Ensure plummet cord will not foul on plummet drag plate.

Observed_____ Date_____

5. Ensure mine is painted and stenciled in accordance with SW550-AE -MMI-010 and applicable ET Request.

Observed_____ Date_____

FINAL QUALIFICATION AS
MK 65 LAYING MINE ASSEMBLER

NAME _____ RANK/RATE_____

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QUALIFICATION

Having observe satisfactory performance, it is recommended the trainee be designated a qualified MK 65 laying MINE ASSEMBLER.

RECOMMENDED _____ DATE _____
(Supervisor)

RECOMMENDED _____ DATE _____
(Department Head)

RECOMMENDED _____ DATE _____
(Readiness Officer)

TRAINING RECORD ENTRY _____ DATE _____
(Training Petty Officer)

APPROVED _____ DATE _____
(Commanding Officer)

A. LAYING MINE MK 65 DISASSEMBLY (JOB SHEET 10-2)

Complete the following task:

1. Remove safety device and shipping & storage cover.

Observe_____ Date_____

2. Remove access well cover

Observed_____ Date_____

3. Remove float container.

Observed_____ Date_____

4. Remove pinger house.

Observed_____ Date_____

5.Remove rear cover plate and connector

Observed_____ Date_____

B. ASSEMBLY OF LAYING MINE MK 65 (JOB SHEET 10-3)

Complete the following task:

1. Install feed-through connector and torque to 12 lb-ft.

Observed_____ Date_____

2. Install rear cover plate and torque 20 lb-ft.

Observed_____ Date_____

3. Mount sonar transmitter(s) IAW SW550-AE-MMI-020.

Observed_____ Date_____

4. Install pinger housing and torque to 18 lb-ft.

Observed_____ Date_____

5. Install float container and torque to 10 lb-ft.

Observed_____ Date_____

6. Verify hazard stencil on tail section is legible.

Observed_____ Date_____

7. Place ejector spring in float container.

Observed_____ Date_____

8. Attach float rapid repair link to float container and install float.

Observed_____ Date_____

9. Install tail section and torque to 50 lb-ft.

Observed_____ Date_____

10. Recovered mine by the marine mammal system.

Observed_____ Date_____

11.Install fairing and torque to 35 lb-ft.

Observed_____ Date_____

C. **SYSTEM TEST OF LAYING MINE MK 65 (JOB SHEET 10-4)**

COMPLETE THE FOLLOWING TASK:

1. Perform self test on bottom section of MK 595 test set.

Observed_____ Date_____

2. Conduct systems test, MK 595 test set.

Observed_____ Date_____

3. Conduct troubleshooting procedures, MK 595 test set.

Observed_____ Date_____

4. Inspect lanyard assembly and verify proper length.

Observed_____ Date_____

5. Electrically connect safety device ensuring assembler can hear and feel alignment pins snapping snapping into place.

Observed_____ Date_____

5. Install safety device and torque to 18 lb-ft.

Observed_____ Date_____

D. PREPARATION AND TRANSFER OF MINE FROM DOLLY TO SKID (JOB SHEET 10-5)

COMPLETED FOLLOWING TASK:

1. Install S&A well shipping and storage cover and torque to 70 lb-in.

Observed_____ Date_____

2. Unfold safety bar streamer and tape to top of tail section ensuring streamer does not cover HI_LO alt switch.

Observed_____ Date_____

3. Place mine in MK 25 mod 2 skid, torque clamp band nuts to 120 lb-in.

Observed_____ Date_____

FINAL QUALIFICATION AS
MK 62/63(82/83)LAYING MINE ASSEMBLER

NAME _____ RANK/RATE_____

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QUALIFICATION

Having observe satisfactory performance, it is recommended the trainee be designated a qualified MK 62/63(82/83) laying mine assembler.

RECOMMENDED _____ DATE _____
(Supervisor)

RECOMMENDED _____ DATE _____
(Department Head)

RECOMMENDED _____ DATE _____
(Readiness Officer)

TRAINING RECORD ENTRY _____ DATE _____
(Training Petty Officer)

APPROVED _____ DATE _____
(Commanding Officer)

A. BOMB PREPARATION (JOB SHEET 4-1)

COMPLETED THE FOLLOWING TASK:

1. Verify suspension lug (MS3314)

Observed_____ Date_____

2. Verify suspension lug (MS3314) or (MK 6-1

Observed_____ Date_____

3. Connect Ordnance Ground to suspension lug on case.

Observed_____ Date_____

4. Remove AFT shipping cap, tail fuze and cable fuze well shipping plugs and setscrew.

Observed_____ Date_____

5. Visually inspect cable well, forward and AFT fuze well are free of and foreign matter, moisture, corrosion or dirt.

Observed_____ Date_____

6. Verify V-groove does not exhibit external damage that will affect fit or fuction.

Observed_____ Date_____

7. Verify setscrew is completely threaded.

Observed_____ Date_____

8. Verify all threaded surface are not fouled or damaged.

Observed_____ Date_____

9. Verify all preformed packing seating surfaces; NO gashes, grooves, pits or scratches deeper than 1/32 inch.

Observed_____ Date_____

B. PRESENT PROGRAMMING TARGET DETECTING DEVICE (4-3-1):

1. Verify TDD Safety pin and Warning tag are in Pop-out pin.

Observed_____ Date_____

2. Prepare and ESD word area for TDD (shore station only).

Observed_____ Date_____

C. INSTALLATION OF BATTERY MK 130 INTO TDD (4-3-2):

1. Place TDD and Battery on antistatic mat. Put on wrist strap and uncscrew lower housing from TDD and set a side.

Observed_____ Date_____

2. Insert battery into base of TDD. Ensuring that molded connector of battery and TDD mates firmly together. Screw lower housing on base of.

Observed_____ Date_____

FINAL QUALIFICATION AS
VEMS MK 74-1 ASSEMBLER

NAME _____ RANK/RATE_____

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QUALIFICATION

Having observe satisfactory performance, it is recommended the trainee be designated a qualified VEMS MK 74-1 ASSEMBLER.

RECOMMENDED _____ DATE _____
(Supervisor)

RECOMMENDED _____ DATE _____
(Department Head)

RECOMMENDED _____ DATE _____
(Readiness Officer)

TRAINING RECORD ENTRY _____ DATE _____
(Training Petty Officer)

APPROVED _____ DATE _____
(Commanding Officer)

A. BALLAST SETION MK 1-0 CUTTER ASSEMBLY AND INSTALLATION (3-1.3).

1. Separate junction block from manifold block and the mating surfaces of the junction block with a clean cloth.

Observed_____ Date_____

2. Perform electrical check on actuator (resistance should read 0.9 to 1.6 ohms).

Observed_____ Date_____

3. Thread actuator into manifold and tighten.

Observed_____ Date_____

4. Install new preformed packing and RF gasket on manifold assembly.

Observed_____ Date_____

5. Connect the 2 wires from the explosive actuator to the junction block terminals TS2 and CH 7-2.

Observed_____ Date_____

6. Assemble junction block to manifold, ensuring it is oriented correctly and through holes and threaded holes are aligned. **(DO NOT STRESS OR PINCH ACTUATOR WIRES)**

Observed_____ Date_____

7. Install junction block bolts(with antiseize compound) and washers tighten; then torque to 13 ft-lb.

Observed_____ Date_____

8. Stencil AMMUNITION NON EXPLOSIVE in ¼-inch letters on cutter block.

Observed_____ Date_____

9. Apply teflon tape to hose adapter fitting and install fitting with new gasket in bottom of cylinder block.

B. CABLE CUTTER MK 31 INSTALLATION (3-1.4.)

1. Remove all traces of anti-seize from hose adapter sealing surface.

Observed_____ Date_____

2. Remove cutter bolts and nuts from cutter assemble. Apply antiseize compound to the bolt threads. Remove Hose #2 from fill/vent fitting to allow torque of cutter. Install cutter assemble and bolt in ballast section. Install nuts and washers on bolts and torque to 30 ft-lb. Reinstall Hose #2 and tighten.

Observed_____ Date_____

3. Apply teflon tape to hose adapter fitting, connect hose #3 from the discharge valve to bottom of cutter and tighten.

Observed_____ Date_____

4. Apply teflon tape to the breakaway fitting and connect #4 from the air bottle and tighten.

Observed_____ Date_____

5. Remove lanyard from cutter block and pass the lanyard through the hole in the ballast section body stenciled **PULL TO ARM.**

Observed_____ Date_____

6. Apply a heavy coat of grease to arming pin and insert pin in the cutter block.

Observed_____ Date_____

7. Remove the cotter pin from the anvil in the cutter assembly. Pull the anvil out of the cutter assembly. Pass the cable through the cutter block and replace the anvil so the cable is held between the anvil and arming pin. Ensure cable is not pinched against air bottle. Replace the cotter pin and spread the ends just enough to retain it in anvil.

Observed_____ Date_____

D. AIR BOTTLE CHARGE (3-1.5.)

1. Remove the valve cover cap. Using valve handle key, ensure the valve is fully seated clockwise.

Observed_____ Date_____

2. Remove the nylon screw and stop. Using cap key, unscrew and remove the vent cap.

Observed_____ Date_____

3. Setup the compressor where there is sufficient source of electric power.

Observed_____ Date_____

4. Pre-Start Check to verify compressor operation.

Observed_____ Date_____

5. Connect air supply hose to fill/vent. Open valve wheel fully counterclockwise with valve handle key.

Observed_____ Date_____

6. Push the **START** button. The compressor will fill the air bottle until the STOP button is pressed or the automatic pressure switch set point is reached.

Observed_____ Date_____

7. Follow manufactures instruction for draining compressor.

Observed_____ Date_____

8. Shutdown compressor (2000psi).

Observed_____ Date_____

9. Apply a liberal coating of liquid detergent mixed with water to all hose fittings and adapters, and visually inspect them for foaming or bubbling which indicates a possible leak.

Observed_____ Date_____

10. Vent air hose between ballast section and back pressure regulator, remove hose.

Observed_____ Date_____

11. Grease O-ring and valve cover, vent cap threads. Install 2 new preformed packing's on valve cover cap and vent cap. Replace valve cover cap and vent cap and tighten. Replace nylon screw and stop. **DO NOT OVER TIGHTEN SCREW.**

Observed_____ Date_____

E. SONAR TRANSMITTER ASSY. TESTING (3-1.6.)

1. Set Delay cap to ND (No Delay).

Observed_____ Date_____

2. Perform test procedures as per SW550-AE-MMI-020.

Observed_____ Date_____

F. DELAY CAP SETTING AND SONAR TRANSMITTER ASSEMBLY (3-1.7)

1. Set Delay Cap setting that corresponds to ET request.

Observed_____ Date_____

2. Install battery in sonar transmitter body.

Observed_____ Date_____

3. Apply grease to preformed packing on delay cap. Position the shock pad over the spring on the internal face of the delay cap. Thread delay cap hand tight into sonar transmitter body.

Observed_____ Date_____

G. SONAR TRANSMITTER MOUNTING (3-1.8)

1. Install sonar transmitter assembly into holder and secure in place using 2 tie-down straps.

Observed_____ Date_____

H. BUOY SECTION MK1-1
BUOY SECTION PREPARATION (3-2.2.)

1. Lift buoy section and place on dolly, Ensure CG of buoy section is centered on dolly and retaining pin is at 11 o'clock position.

Observed_____ Date_____

2. Secure buoy section to dolly with straps and that straps are **not on top of transducers.**

Observed_____ Date_____

3. Remove cap from buoy section. Remove sealing cap.

Observed_____ Date_____

4. Attach sealing cap adapter to nipple allowing pressure to equalize.

Observed_____ Date_____

5. Remove sealing cap adapter, install sealing cap and loosely install cap.

Observed_____ Date_____

I. BATTERY VOLTAGE CHECK (B2-6)

1. Battery voltage check, IAW page B2-2.

Observed_____ Date_____

J. BATTERY INSTALLATION

1. Remove sealing cap from cover, with one person supporting cover, loosen and remove the clamp nut and clamp band.

Observed_____ Date_____

2. Separate cover from case, disconnect cables at connector C3PLA. Connect cable to dummy connector inside cover. Remove desiccant and C1PLJ cable, if present.

Observed_____ Date_____

3. Disconnect cable connectors C3PLD, C3PLB, C3PLC, C4PLA and C4PLB from EER.

Observed_____ Date_____

4. Remove nut and washer which hold ground lead C3CH2-1 to case. Remove ground lead and loosely replace nut and washer.

Observed_____ Date_____

5. Loosen the three captive bolts until rack moves freely, and **Carefully slide** EER out on runners and remove. Be careful not to damage the cables. Place EER on workbench.

Observed_____ Date_____

6. Put on safety glasses/goggles/faceshield. Record Battery MK 151 serial number on MAF.

Observed_____ Date_____

7. Align holes in Battery MK 151 with securing post in back of rack, gently lower battery until secure.

Observed_____ Date_____

8. Secure battery in place with two bolts and torque to 15 in-lb.

Observed_____ Date_____

9. Plug battery cable into MTU connector and secure cable with an electrical tiedown.

Observed_____ Date_____

10. Record Battery MK 150 serial number on MAF.

Observed_____ Date_____

11. Verify Wedge-Loks on battery are loose and properly aligned. Slide Battery MK 150 on its guide rail into rack. Tighten top and bottom set of Wedge-Loks.

Observed_____ Date_____

12. Install battery retaining straps and connect electrical harness on back of rack of the battery.

Observed_____ Date_____

13. Slide rack into buoy section and tighten three capture bolts hand-tight.

Observed_____ Date_____

14. Reconnect grounding lead (C3CH2-1) to case. Install nut and washer hand-tight.

Observed_____ Date_____

K. VEMS TEST (3-2.4.)

1. Place buoy section on Depot Automatic Test Equipment (DATE) trolly and secure with tiedown strap.

Observed_____ Date_____

2. Move buoy section and cover into Test area and perform Stage 1 test IAW appendix A.

Observed_____ Date_____

L. BUOY SECTION MK 1 PREPARATION FOR USE (3-2.5.)

1. Verify instrument rack is seated firmly in case.

Observed_____ Date_____

2. Torque the three captive bolts alternately to 11 ft-lb.

Observed_____ Date_____

3. Verify connectors C3PLB, C3PLC, C3PLE, C4PLA and C4PLB are connected to instrument rack.

Observed_____ Date_____

4. Disconnect C3PLA from dummy connector in cover and connect to C3SKA2-2 on EER. Connect C3PLD to C3SKD on EER.

Observed_____ Date_____

5. Verify ground lead is attached. Torque nuts on C3CH2-1 and C3CH2-2 to 30 in-lb.

Observed_____ Date_____

6. Clean preformed packing groove in face of cover, apply light coat of grease to new preformed packing and install packing in groove.

Observed_____ Date_____

7. Place buoy section cover in position and place clamp band around flanges.

Observed_____ Date_____

8. Coat clamp bolt with antiseize install clamp nut, tighten and torque to 75 in-lb.

M. LEAK TEST AND PURGE BUOY SECTION (3-2.6)

1. Connect sealing cap adapter to nipple.

Observed_____ Date_____

2. Connect center hose of charging manifold to vacuum pump unit, low pressure side to sealing cap adapter and ensure both valves of charging manifold are closed.

Observed_____ Date_____

3. Set vacuum pump ON/OFF switch to ON. Open charging manifold low pressure valve(L) until buoy section has 20-inch vacuum. Turn vacuum pump OFF.

Observed_____ Date_____

4. Wait 2 minutes and record low pressure gauge reading. If leak is found correct and repeat steps 3 thru 9. NO leaks present, disconnect center hose from vacuum pump and low pressure hose from buoy section.

Observed_____ Date_____

5. Wait 8 hours, Reconnect sealing cap adapter and low pressure side of gauge to buoy section. Vacuum must **not drop more than 2 inches** from reading taken in step 9. No leaks go to step 13. If leakage occurs correct and repeat step 3 thru 12.

Observed_____ Date_____

6. Connect high pressure side of charging manifold to nitrogen regulator and ensure both valves on gauge tree are closed.

Observed_____ Date_____

7. Ensure nitrogen regulator valve on bottle is fully closed. Open nitrogen bottle regulator slowly(clockwise) until regulator reads approximately 30 psi.

Observed_____ Date_____

8. Open charging manifold high pressure valve (H).

Observed_____ Date_____

9. Crack charging manifold low pressure valve (L) and backfill buoy section until vacuum reading on low pressure gauge is reading 10 inches.

Observed_____ Date_____

10. Close charging manifold tree low (L) and high (H) pressure valve. Remove sealing cap adapter and low pressure hose from buoy section and install sealing cap.

Observed_____ Date_____

11. Close valve on nitrogen regulator and bottle. Disconnect high pressure hose from nitrogen bottle.

Observed_____ Date_____

12. Lightly grease new preformed packing with grease and install on cap. Reinstall cap on buoy section and torque to 30 ft-lb.

Observed_____ Date_____

N. VEMS MK 74-1 ASSEMBLY MARRIAGE OF BALLAST AND BUOY SECTION (3-3.2)

1. Position buoy and ballast section approximately 15 inches apart. Insert tensioner tool, back off nut & washer. Push tensioner tool and wire rope back through ballast case. Remove cotter pin and clevis pin from buoy section. Ensure alignment marks are aligned.

Observed_____ Date_____

2. Position free end of tensioner wire rope to buoy section, ensuring wire rope is not twisted. Refit clevis pin in buoy and through eye of wire rope. Replace cotter pin and spread the ends.

Observed_____ Date_____

3. Perform electrical check on actuator. Set multimeter to 200 ohms. Connect leads to cable C2SKA. Resistance should read 0.9 to 2.0 ohms. (If test unsatisfactory set a side for correction.) Connect cable C2SKA connector C1PLJ to buoy section.

Observed_____ Date_____

4. Pull tensioner back through cover ensuring squared shaft is pulled through square hole, coat threads of tensioner with grease. Slip washer over tensioner threads and then screw nut on by hand, remove tensioner tool.

Observed_____ Date_____

5. Use 36mm socket and ratchet, take up slack in wire rope.

Observed_____ Date_____

6. Torque tensioner nut to 85 ft-lb.

Observed_____ Date_____

7. Torque rim clamp nut to 75 in-lb.

Observed_____ Date_____

8. **OA-01** Only: If planting depth of 100 to 300 ft, use 600 ft. Kevlar recovery line.

Observed_____ Date_____

9. **OA-01** Only: If planning depth less than 100 ft, use 200 ft Kevlar recovery line.

Observed_____ Date_____

10. Cover clamp band (between buoy case & cover) by wrapping with 2 full turns of ordnance tape.

Observed_____ Date_____

11. Unscrew and remove threaded pin, withdraw retaining pin enough to allow access. Attach end of recovery line to wire rope end using swivel shackle, secure with safety wire. Place wire rope assembly end into slot in buoy section. Push retaining pin back into place passing is through wire rope's eye and screw threaded nylon pin into place.

Observed_____ Date_____

12. Wrap recovery line onto buoy **do not cover eye of line** with successive turns of rope and install electrical tie's.

Observed_____ Date_____

13. Remove shackle pin from shackle on ballast section. Shackle recovery line to ballast section and add seizing wire to shackle and apply liberal coating of grease to shackle.

Observed_____ Date_____

14. Route recovery line through empty slot in sensor ring and install cable strapping to prevent line from unwrapping.

Observed_____ Date_____

15. Place tape over the last three wraps of line.

Observed_____ Date_____

16. Place fully assembled vem into lower halves of crates MK 114 and MK 113. Secure top halves to crates.

Observed_____ Date_____

O. PREPARATION FOR TRANSIT (3-3.4.)

1. Check air bottle pressure.

Observed_____ Date_____

2. Verify soluble plugs and retaining rings (8) are prepared for shipment.

Observed_____ Date_____

P. MINE PROGRAMMER ANALYZER (MPA) (3-4.)

1. MPA self-test for pre-deployment.

Observed_____ Date_____

Q. SURFACE TRANSPONDER UNIT (STU) (3-5.)

1. STU stage 3 test for pre-deployment.

Observed_____ Date_____

R. EXERCISE SUPPORT SYSTEM MK 7 (E.S.S.) (job sheet E2)

1. Perform Class “B” on E.S.S. MK 7 IAW job sheet E2-3.

Observed_____ Date_____

S. OVERSIDE BODY HANDLING SYSTEM MK 9-0 (OSBHS) (job sheet H1)

1. Perform Class “B” on OSBHS IAW job sheet H1-3.

Observed_____ Date_____

FINAL QUALIFICATION AS
MK 91 EXERCISE HEAD ASSEMBLER

NAME _____ RANK/RATE_____

This page is to be used as a record of satisfactory completion of designated sections of the Personnel Qualification Standards (PQS). Only specified supervisors may signify completion of applicable sections either by written or oral examination, or by observation of performance, the examination or checkout need not cover every item: however, sufficient number should be covered to demonstrate the examiner's knowledge. This qualification is to be maintained in the individual's training record with appropriate entries made to the individual's service record.

QUALIFICATION

Having observe satisfactory performance, it is recommended the trainee be designated a qualified MK 91 EXERCISE HEAD ASSMBLER.

RECOMMENDED _____ DATE _____
(Supervisor)

RECOMMENDED _____ DATE _____
(Department Head)

RECOMMENDED _____ DATE _____
(Readiness Officer)

TRAINING RECORD ENTRY _____ DATE _____
(Training Petty Officer)

APPROVED _____ DATE _____
(Commanding Officer)

A. MK 91 EXERCISE HEAD PREPARATION (JOB SHEET 4-4)

1. Remove nose, mechanism well cover, float well cover, aft access cover, and exploder blanking cover.

Observed_____ Date_____

2. Remove all parts, packages and preformed packing.

Observed_____ Date_____

3. Rotate head until anchor cutout if facing up.

Observed_____ Date_____

4. Remove vent screw, discard old perform packing, grease and install new packing. Torque to 5 lb-ft.

Observed_____ Date_____

B. ANCHOR INSTALLATION

1. Apply 35 PSI air pressure to right manifold port NO. 3 to remove aft release bolt, then apply same air pressure to left manifold port NO.3 to remove forward release bolt.

Observed_____ Date_____

2. Clean threads of release bolt, heavy grease locking ball end and lightly grease packing on bolt.

Observed_____ Date_____

3. Reinstall release bolts. And install retaining ring on each bolt.

Observed_____ Date_____

4. Remove anchor from skid and place on 4x4’s.

Observed_____ Date_____

5. If planting depth less than 100 ft. attach mooring line, 3-4 inches from attaching bolt (bowline knot). More than 100 ft. DO NOT INSTALL MOORING LINE.

Observed_____ Date_____

6. Install mooring line dispenser box in anchor cavity (as needed). Secure dispenser box with two 35 inch masking tape.

Observed_____ Date_____

7. Install anchor using hoist, route mooring line and attach to head if applicable tighten each weight release bolt nut securely (locktite).

Observed_____ Date_____

8. Install safety strap around anchor/head. Remove hold down plate from gel-cell cavity.

C. GEL-CELL INSTALLATION

1. Record battery serial number on master record sheet.

Observed_____ Date_____

2. Install fully charged battery assembly in gel-cell cavity in actuation system well. Connect battery CA-1392 to CA-1389.

Observed_____ Date_____

3. Tighten hold down plate, tighten securely.

Observed_____ Date_____

4. Rotate MK 91 head until exploder well is on top.

Observed_____ Date_____

D. SIDE RUNNER INSTALLATION

1. Coat threads of side runner screws with anitseize compound.

Observed_____ Date_____

2. Install side runner, blunt end forward. Install 1 inch screw in forward screw hole, 7/8 inch screw in aft.

Observed_____ Date_____

3. Torque screws to 5 lb-ft.

Observed_____ Date_____

E. FLOAT CLAMP INSTALLATION

1. Ensure piston is in the fully down position.

Observed_____ Date_____

2. Install two float clamps (notched side down) tighten securely.

Observed_____ Date_____

F. EXERCISE HEAD SYSTEM CHECK (JOB SHEET 4-5)

1. Ensure pressure release assembly bottles are not installed, and safety strap is installed.

Observed_____ Date_____

2. Connect Function Simulator MK 94 to the cable assemblies on the aft bulkhead.

Observed_____ Date_____

3. Perform Functional Test on Control Box MK 59.

Observed_____ Date_____

G. PRESSURE SWITCHES TEST/ASSEMBLY/INSTALLATION JOB SHEET (4-6)

1. Install pressure adapter in upper instrument port, secure finger tight.

Observed_____ Date_____

2. Connect dead weight tester and perform pressure switches test.

Observed_____ Date_____

3. Disconnect dead weight tester and Function simulator.

Observed_____ Date_____

4. Make settings on Control Box MK 59.

Observed_____ Date_____

5. Obtain pressure release Assembly bottles, check for “V” and for expended and non expended bottles.

Observed_____ Date_____

6. If present remove black conductive silicone gasket surrounding the receptacle pins.

Observed_____ Date_____

7. Perform hazardous circuit test on pressure release assembly bottles.

Observed_____ Date_____

8. Install bottles and perform stray voltage check with multimeter on CA-1391.

Observed_____ Date_____

9. Install aft access port and torque screws 4 plus or minus 1 lb ft.

Observed_____ Date_____

10. Stencil two 2 inch brown dots adjacent to Float/Flare launcher well.

Observed_____ Date_____

H. NOSE-EXERCISE HEAD/EXPLOSIVE SECTION MARRIAGE ACTION SYSTEM WEIGHT SIMULATOR INSTALLATION JOB SHEET (4-7)

1. Install packing on nose and weight simulator.

Observed_____ Date_____

2. Install weight simulator torque to 60 plus or minus 5 lb ft.

Observed_____ Date_____

3. Do not connect Flood Valve connector. Coil to 3 inch diameter and tie the coil in 2 places 180 degrees apart.

Observed_____ Date_____

4. Install nose and joint band, torque screws to 12 lb ft.

Observed_____ Date_____

5. Install packing on exploder well cover and on blanking cover. Tighten screws securely.

Observed_____ Date_____

I. GUIDE STUD AND SHIM INSTALLATION JOB SHEET (4-7)

1. Lightly coat threads of guide stud screw with antiseize compound.

Observed_____ Date_____

2. Install forward guide stud and shim, higher end forward. Install 1 ¼ inch screw in forward hole and 7/8 screw in aft hole.

Observed_____ Date_____

3. Torque screws to 16 lb ft.

Observed_____ Date_____

J. EXPLOSIVE SECTION/EXERCISE HEAD LEAK TEST JOB SHEET (4-9)

1. Remove vent screw and install leak test adapter in exercise head.

Observed_____ Date_____

2. Set switch S-1 to on, draw 25 inch of vacuum, close V-2 wait two minutes; then record reading. Wait 10 minutes, vacuum must be with in 2 inches of original reading.

Observed_____ Date_____

3. Open nitrogen cylinder valve and adjust R-2 until pressure of 2 psig is indicated. Close V-1 valve.

Observed_____ Date_____

4. Install new packing and install vent screw. Torque vent screw to 5 lb ft.

Observed_____ Date_____

K. MAIN MINE ASSEMBLY PREPARATION JOB SHEET (4-10)

1. Ensure ECI 0168 has been completed on CA-1369.

Observed_____ Date_____

2. Record Tailcone Reg. No. on master record sheet.

Observed_____ Date_____

3. Install 19 sponges, two in each section that contains a center stud. Three sponges in each section that does not contain a center stud.

Observed_____ Date_____

4. **OA 06 ONLY** Install shorting plug in ACU.

Observed_____ Date_____

5. Install new performed packing.

Observed_____ Date_____

6. Perform hazardous circuit test to fuse ejector meter must indicate between 1-3 ohms.

Observed_____ Date_____

7. Set dive switch on ACU as specified on mine master record sheet.

Observed_____ Date_____

8. Install joint band. Torque to 12 lb ft.

Observed_____ Date_____

L. BATTERY INSTALLATION

1. Grease threads of battery screws.

Observed_____ Date_____

2. Install two flat washers per screw.

Observed_____ Date_____

3. Torque battery screws progressively (5lbft) up to 20 lbft.
Observed_____ Date_____

M. EXPLOSIVE/EXERCISE HEAD MARRIAGE JOB SHEET (4-11)

1. Install preformed packing on explosive section/exercise head.

Observed_____ Date_____

2. **Exercise Head Only** Connect CA 1367 S2840 connector to receptacle P2840.

Observed_____ Date_____

3. **Explosive Section Only** Tuck CA 1367 into battery compartment below starboard battery rail.

Observed_____ Date_____

4. Install joint bands, torque to 12 lbft.

N. GUIDE STUD INSTALLATION

1. Coat guide stud screw with antiseize compound.

Observed_____ Date_____

2. Install guide stud with large end forward on battery section.

Observed_____ Date_____

3. Install 1 ½ inch screw in forward hole and 1 inch screw in aft hole. Torque to 16 lbft.

Observed_____ Date_____

O. SIDE RUNNER INSTALLATION

1. Coat side runner screws with antizseize compound.

Observed_____ Date_____

2. Install blunt end of side runner forward, in second (aftermost set of holes on battery compartment.

Observed_____ Date_____

3. Install 1 inch screw in forward hole and 7/8 inch screw in aft hole. Torque to 5 lbft.

Observed_____ Date_____

P. FORWARD/AFT BATTERY VENT LEAK TEST JOB SHEET (4-13)

1. Remove vent screw and install leak test adapter in exercise head.

Observed_____ Date_____

2. Set switch S-1 to on, draw 25 inch of vacuum, close V-2 wait two minutes; then record reading. Wait 10 minutes, vacuum must be with in 2 inches of original reading.

Observed_____ Date_____

3. Open nitrogen cylinder valve and adjust R-2 until pressure of 2 psig is indicated. Close V-1 valve.

Observed_____ Date_____

4. Install new packing and install vent screw. Torque vent crew to 5 lbft.

Observed_____ Date_____

5. Repeat steps 1-4 for aft battery section.

Observed_____ Date_____

Q. BOTTOM RUNNER INSTALLATION

1. Coat screw of bottom runner with antiseize compound. Aluminum coated screws are used on forward runner of explosive section.

Observed_____ Date_____

2. Install transition block and bottom runner assembly (aft, middle, forward).

Observed_____ Date_____

3. **OA-06** Ensure safety strap fits into cutout of forward bottom runner. Torque forward bottom runner screws to 24 lbin.

Observed_____ Date_____

4. Torque all bottom runner screws to 7 lbft.

Observed_____ Date_____

R. SONAR TRANSMITTER MK 87 INSTALLATION JOB SHEET (4-13)

1. Apply loctite to threads of screws and secure transmitter assembly to top starboard vane.

Observed_____ Date_____

2. Torque screws to 7 lbft.

Observed_____ Date_____

S. FINAL PREPARATION FOR DELIVERY JOB SHEET (4-14)

1. Check external opening ensure free from obstruction.

Observed_____ Date_____

2. **OA-06** Ensure safety strap is tightly secured around exercise head/anchor and float/flare launcher signal tube cape.

Observed_____ Date_____

3. Stencil minefield number in ½ inch characters.

Observed_____ Date_____

4. Ensure a Control Assembly Cable MK 1 (A-cable) and cutter assembly is ready for delivery.

Observed_____ Date_____

5. Ensure Propeller guard is installed.

Observed_____ Date_____

FINAL QUALIFICATION AS
MK 53 BATTERY ASSEMBLER

NAME _____ RANK/RATE_____

This page is to be used as a record of satisfactory completion of designated sections of the Personnel Qualification Standards (PQS). Only specified supervisors may signify completion of applicable sections either by written or oral examination, or by observation of performance, the examination or checkout need not cover every item: however, sufficient number should be covered to demonstrate the examiner's knowledge. This qualification is to be maintained in the individual's training record with appropriate entries made to the individual's service record.

QUALIFICATION

Having observe satisfactory performance, it is recommended the trainee be designated a qualified MK 53 Battery assembler.

RECOMMENDED _____ DATE _____
(Supervisor)

RECOMMENDED _____ DATE _____
(Department Head)

RECOMMENDED _____ DATE _____
(Readiness Officer)

TRAINING RECORD ENTRY _____ DATE _____
(Training Petty Officer)

APPROVED _____ DATE _____
(Commanding Officer)

A. MK 53 BATTERY ACTIVATION (APPENDIX E)

1. Verify shipping container does not show signs of electrolyte leakage.

Observed_____ Date_____

2. Remove cells, vent plugs, battery lifting handles and miscellaneous parts. Set aside.

Observed_____ Date_____

3. Remove battery tray subassembly and place on MK 21 Dolly.

Observed_____ Date_____

B. BATTERY PARTIAL ASSEMBLY

1. **Lower cell bank assembly.** Install block spacer located on terminal block end and forward and aft shims.

Observed_____ Date_____

2. Install 22 propulsion cells.

Observed_____ Date_____

3. Install 10 inter-cell connectors and nuts. Torque nuts to 62 lb-in. Install 11 inter-row connectors and nuts. Torque to 62 lb-in.

Observed_____ Date_____

4. Install port and starboard wire harness and route wires.

Observed_____ Date_____

Port and starboard cell bank assembly. Install shim, on port and starboard trays. Install side spacing pieces between starboard and port cell banks and the lower cell bank. Cut out toward forward end of battery.

Observed_____ Date_____

1. Install 16 propulsion cells, 8 cells per side.

Observed_____ Date_____

2. Install tray spacers along free side of propulsion cells.

Observed_____ Date_____

3. Install 18 control cells, 9 cells per side.

Observed_____ Date_____

4. Install 7 inter-cell connectors and nuts. On port and starboard propulsion cells. Torque nuts to 62 lb-in. Install 7 inter-row connectors and nuts. Torque to 62 lb-in. On port and starboard propulsion cells.

Observed_____ Date_____

5. Install 8 inter-row connectors and nuts on port and starboard control cells and torque to 37 lb-in.

Observed_____ Date_____

6. Install side flexible connector onto propulsion cell 1. Install nuts on positive terminals and torque to 62 lb-in.

Observed_____ Date_____

7. Connect inter-unit connector No. 1 between negative terminal on cell 9 and positive terminal on cell 10 of control cells. Connect inter-unit connector No. 2 between positive terminal on control cell 1 and positive terminal on propulsion cell 1.

Observed_____ Date_____

8. Install side flexible connector onto propulsion cell 31. Install nuts on positive terminals and torque nuts to 62 lb-in.

9. Install step connector No. 1 and nuts between positive terminal of cell 9 on lower bank to negative terminal of cell 8 on port cell bank. Torque nuts to 62 lb-in.

Observed_____ Date_____

10. Install two spacers rails over middle of two rows of vent caps on the lower cell bank to support upper cell bank when installed.

Observed_____ Date_____

C. UPPER CELL BANK ASSEMBLY

1. Install shim and spacers into upper tray.

Observed_____ Date_____

2. Install 22 propulsion cells into upper tray.

Observed_____ Date_____

3. Install 10 inter-cell connectors and nuts. Install 11 inter-row connectors and nuts. Torque nuts to 62 lb-in.

Observed_____ Date_____

D. BATTERY ACTIVATION (FILLING)

1. Adjust vacuum pump so gage draws 12 plus or minus 2 inch of mercury.

Observed_____ Date_____

2. Remove and retain vent valves. Draw a vacuum for two seconds. Pour one half of electrolye into cell. Draw vacuum until bubbles appear. Repeat step.

Observed_____ Date_____

3. Check each cell for open circuit. Any voltage reading indicates cell has been filled. Allow cells to stand one to four hours after filling.

Observed_____ Date_____

4. After 4 hours, draw a vacuum 12 plus or minus 2 inch mercury to remove residual gas, install vent valves and torque to 4-5 lb-in.

Observed_____ Date_____

5. Fill Control cell the same as previous step, except the 4 oz. Bottles are used.

Observed_____ Date_____

6. Record filling date on battery nameplate and permanent battery record card.

Observed_____ Date_____

7. Install control cells on battery, connect upper tray connector to negative terminal posts of cell 38 an to positive terminal post of cell 39. Install 4 nuts, two at each cell.

Observed_____ Date_____

8. Connect step connector No. 2 to negative terminal posts of cell 38 an to positive terminal post of cell 39. Install 4 nuts, two at each cell. Torque nuts to 62 lb-in.

Observed_____ Date_____

9. Install hold down rails and nuts, torque to 10 lb-in.

Observed_____ Date_____

10. Soak all cells a minimum of 48 hours and a max of 7 days prior to charging.

Observed_____ Date_____

11. Perform voltage check, replace any cell that is below 1.58 volts.

Observed_____ Date_____

12. Rinse empty bottles three times with tap water. Cut bottles to prevent reuse.

Observed_____ Date_____

13. Dispose of bottles as normal industrial waste (non-hazardous).

Observed_____ Date_____

E. BATTERY CHARGING (APPENDIX F)

1. Perform charger preparation.

Observed_____ Date_____

2. Connect charging cable to terminal block on battery.

Observed_____ Date_____

3. Turn Current switch of control section to on adjust until ammeter indicates approximately 2 amps.

Observed_____ Date_____

4. Turn Current switch of propulsion section to on adjust until ammeter indicates approximately 5 amps.

Observed_____ Date_____

5. Ensure voltages indicated on voltmeters are less than 46vdc (control) 130vdc (propulsion).

Observed_____ Date_____

6. Record terminal voltage hourly, after one cell reaches 2.00 volts monitor charging every 5 minutes.

Observed_____ Date_____

7. Stop charging individual sections (control/propulsion) when one cell reaches 2.00 volts and remaining cells read 1.93 volts. Record terminal voltage at end of charge for each cell in affected bank.

Observed_____ Date_____

8. Allow battery to stand until next work day, measure individual cell voltages. Replace any cell that is under 1.80 volts.

Observed_____ Date_____

9. Measure open-circuit voltages of control section and each half of propulsion section. Add readings of each propulsion section to obtain total voltage for propulsion. Record readings.

Observed_____ Date_____

F. BATTERY CELL ELECTROLYTE CLEANUP

1. Remove affected cell from battery.

Observed_____ Date_____

2. Clean cell with 20% vinegar and 80% water. Rinse entire cell with fresh water.

Observed_____ Date_____

3. Using solution remove electrolyte and potassium carbonate residue from vent and rubber ring. Reassemble rubber ring and vent valve, and install inter-cell connectors, nuts and torque.

Observed_____ Date_____

FINAL QUALIFICATION AS

MK 52/55 ACTUATION MINE ASSEMBLER

NAME _____ RANK/RATE_____

This page is to be used as a record of satisfactory completion of designated sections of the Personnel Qualification Standards (PQS). Only specified supervisors may signify completion of applicable sections either by written or oral examination, or by observation of performance, the examination or checkout need not cover every item: however, sufficient number should be covered to demonstrate the examiner's knowledge. This qualification is to be maintained in the individual's training record with appropriate entries made to the individual's service record.

QUALIFICATION

Having observe satisfactory performance, it is recommended the trainee be designated a qualified MK 52/55 ACTUATION MINE ASSEMBLER.

RECOMMENDED _____ DATE _____
(Supervisor)

RECOMMENDED _____ DATE _____
(Department Head)

RECOMMENDED _____ DATE _____
(Readiness Officer)

TRAINING RECORD ENTRY _____ DATE _____
(Training Petty Officer)

APPROVED _____ DATE _____
(Commanding Officer)

A. INSTRUMENT RACK ASSEMBLY (SW550-AA-MMI-050 JOB SHEETS 52/55-2-4 AND 52/55-4)

1. For MOD 2 (Job Sheet 52/55-2-4):

a. Conduct battery pack preparation.

Observed_____ Date_____

b. Conduct instrument pack preparation.

Observed_____ Date_____

c. Conduct Battery Test.

Observed_____ Date_____

d. Conduct Operational Test.

Observed_____ Date_____

e. Conduct tail cover preparation.

Observed_____ Date_____

f. Conduct instrument pack closure.

Observed_____ Date_____

2. For MOD 5 (Job Sheet 52/55-5-4):

a. Conduct battery pack preparation.

Observed_____ Date_____

b. Conduct instrument pack preparation.

Observed_____ Date_____

c. Conduct tail cover preparation.

Observed_____ Date_____

d. Conduct Battery Test.

Observed_____ Date_____

e. Conduct Operational Test.

Observed_____ Date_____

f. Conduct instrument pack closure.

Observed_____ Date_____

B. **MINE CASE PREPARATION (JOB SHEET 3-1):**

1. Verify suspension lugs are MS3314.

Observed_____ Date_____

2. Inspect preformed packing seating surfaces for gashes greater than 1/32″.

Observed_____ Date_____

3. Install search coil and torque coupling nut to 15 lb-ft.

Observed_____ Date_____

4. Tighten setscrew in coupling nut.

Observed_____ Date_____

5. Install instrument rack being careful not to pinch instrument cable between rails and rack.

Observed_____ Date_____

6. Torque nuts to 18 lb-ft (torque lowermost nuts first).

Observed_____ Date_____

7. Connect cable connectors to search coil.

Observed_____ Date_____

8. Perform continuity test on CA-465.

Observed_____ Date_____

9. Install CA-465 and bolt seal on tail cover and torque female connector to 30 lb-ft.

Observed_____ Date_____

10. Route CA-465 through instrument rack cover into arming device well.

Observed_____ Date_____

C. **MINE ASSEMBLY TEST (JOB SHEET 3-2 OR 3-3):**

1. For MOD 2: Conduct Mine Assembly Test using J/S 3-2.

Observed_____ Date_____

2. For MOD 5: Conduct Mine Assembly Test using J/S 3-3.

Observed_____ Date_____

D. **MINE CASE PREPARATION (JOB SHEET 3-1):**

1. Place two new dessicant bags between rack and mine case.

Observed_____ Date_____

2. Install spacer behind tail cover mating flange.

Observed_____ Date_____

3. Install tail cover and align with mating flange.

Observed_____ Date_____

4. Install support plate with anti-rotation block aligned with lugs over tail cover and torque screws to 18 lb-ft.
Do not pinch instrument cable between tail cover and tail flange.

Observed_____ Date_____

E. **ARMING DEVICE MK 5 INSTALLATION (JOB SHEET 3-4):**

1. Connect instrument cable P4 connector to arming device 10-pin receptacle.

Observed_____ Date_____

2. Conduct arming device circuit test.

Observed_____ Date_____

3. Connect CA-465 to P-3 connector of instrument cable.

Observed_____ Date_____

4. Install arming device and torque to 18 lb-ft.

Observed_____ Date_____

5. Mount sonar transmitter(s) IAW SW550-AE-MMI-020.

Observed_____ Date_____

F. **FLOAT/SHIELD SUBASSEMBLY (JOB SHEET 3-5)**

1. Verify antirotation block is aligned with arrow on shield.

Observed_____ Date_____

2. Install signal tube sealing bolt assembly on signal tube.

Observed_____ Date_____

3. Install signal.

Observed_____ Date_____

4. Install signal tube cap and secure with rivets and safety wire.

Observed_____ Date_____

5. Install mooring line in bottom of float.

Observed_____ Date_____

6. Install recovery line in shield.

Observed_____ Date_____

7. Set float assembly in shield. *Do not pinch cables.*

Observed_____ Date_____

G. **DELAY SWITCH MK 64 ASSEMBLY (JOB SHEET 3-6)**

1. Apply Class-B criteria to MK 1 timing element IAW SW550-AE-MMI-010.

Observed_____ Date_____

2. Apply Class-B criteria to MK 135 battery IAW SW550-AE-MMI-010.

Observed_____ Date_____

3. Conduct delay switch operational test.

Observed_____ Date_____

H. CONTROL UNIT MK 112 INSTALLATION (JOB SHEET 3-7)

1. Remove antirotaion bracket from MK 35 parapack.

Observed_____ Date_____

2. Torque pack-opener plug to 30 lb-ft counterclockwise.

Observed_____ Date_____

3. Torque pack-opener nut (in parapack well) to 90 lb-ft.

Observed_____ Date_____

4. Perform cocking check on MK 112 control unit.

Observed_____ Date_____

5. Install MK 18 explosive actuator.

Observed_____ Date_____

6. Install control unit and torque body of control unit to 20 lb-ft.
Observed_____ Date_____

7. Stencil 2″ yellow dot on back of control unit.

Observed_____ Date_____

I. **SHIELD/FLIGHT GEAR MK 35 SUBASSEMBLY (JOB SHEET 3-8)**

1. Install pack adapters on parapack suspension lines.

Observed_____ Date_____

2. Check pack opener flange for cracks.

Observed_____ Date_____

3. Check gap on parachute pack at orientation key (2 places). Gap must not exceed 3/16″.

Observed_____ Date_____

4. Inspect area where cover and bottom of parachute mate. Ensure suspension line or parachute material is not visible.

Observed_____ Date_____

5. Inspect 8 parachute pack suspension lines for presence of nylon line or copper wire.

Observed_____ Date_____

6. Verify suspension lines are not pulled out more than 3″.

Observed_____ Date_____

7. Install MK 33 release on adapters so that quarterband hinge joint is 45 degrees from pack alignment arrow.

Observed_____ Date_____

8. Install parapack on float/shield subassembly. Antirotation block must fit in cutout in hinge of release quarterband.

Observed_____ Date_____

9. Install float ejector springs into brackets.

Observed_____ Date_____

10.Install parapack fins and torque to 7 lb-ft.

Observed_____ Date_____

11.Install impact plate retainers and torque to 7 lb-ft.

Observed_____ Date_____

J. SHIELD/FLIGHT GEAR INSTALLATION (JOB SHEET 3-10)

1. Test MK 19 explosive fitting.

Observed_____ Date_____

2. Thread cable of fitting through braided R-F shielding.

Observed_____ Date_____

3. Touch shield housing to eliminate static electricity.

Observed_____ Date_____

4. Install fitting in bottom of float and torque to 9 lb-ft.

Observed_____ Date_____

5. Pass cable through center of cable-cutter housing.

Observed_____ Date_____

6. Install shear bolt and torque to 7 lb-ft.

Observed_____ Date_____

7. Set delay switch selector switches to specified delay times.

Observed_____ Date_____

8. Conduct delay switch stray voltage test.

Observed_____ Date_____

9. Test MK 19 explosive fitting.

Observed_____ Date_____

10.Thread cable of fitting through braided R-F shielding.

Observed_____ Date_____

11. Touch shield and delay switch housing cover at same time to eliminate static electricity.

Observed_____ Date_____

12. Install fitting in cutter housing and torque to 10 lb-ft.

Observed_____ Date_____

13. Install cable through delay switch housing cover and torque gland plug to 6 lb-ft.

Observed_____ Date_____

14. Install cable leads in delay switch receptacle sockets.

Observed_____ Date_____

15. Install housing cover on housing and torque screws to 60 lb-in.

Observed_____ Date_____

16. Torque gland plug to 72 lb-in.

Observed_____ Date_____

17. Install nut on MK 63 hydrostatic switch and torque to 35 lb-in.

Observed_____ Date_____

18. Perform CA-465 stray voltage test.

Observed_____ Date_____

19. Touch mine case and shield at same time to eliminate static electricity.

Observed_____ Date_____

20. Install MK 20 explosive fitting on CA-465 and secure with retaining ring.

Observed_____ Date_____

21. Place shield on end of mine, aligning shield cutout with antirotation block on shield support band plate. Be careful no to pinch MK 20 explosive fitting cable.

Observed_____ Date_____

22. Install half bands and torque to 18 lb-in.

Observed_____ Date_____

23. Stencil two 2″ yellow dots on shield and mine case.

Observed_____ Date_____

K. FAIRING MK 19 MOD 0 INSTALLATION (JOB SHEET 3-11) (OA 06B ONLY)

1. Install cap on filing hole cover and torque to 7 lb-ft.

Observed_____ Date_____

2. Slip T-bolt clamp on end of mine so T-bolt is 90 degrees to right of suspension lugs, as viewed from end of mine.

Observed_____ Date_____

3. Position fairing on mine with control-wire exit hole positioned at 2 o'clock.

Observed_____ Date_____

4. Install T-bolt clamp on fairing and torque to 18 lb-ft.

Observed_____ Date_____

L. FINAL PREPARATION FOR DELIVERY (JOB SHEET 3-14)

1. For OA-06B

a. Install turnbuckle anchor plate to turnbuckle.

Observed_____ Date_____

b. Install turnbuckle anchor plate between halfbands and torque half band screw to 18 lb-ft.

Observed_____ Date_____

c. Rotate turnbuckle to tighten control wire.

Observed_____ Date_____

d. Install two locking clips in turnbuckle.

Observed_____ Date_____

2. Stencil local mine number on mine case in 6″ black characters.

Observed_____ Date_____

3. For Mines Under Prep for Delivery to Shore Activities:

a. Remove plastic cover, knurled nut, plastic washer, steel washer, and caution tag from extender piston of MK 5 arming device.

Observed_____ Date_____

4. Provide two MK 4 arming wires and four fahnstock clips.

Observed_____ Date_____

5. For Mines for P-3 Aircraft:
a. Provide two double-ring swivels MAU-166.

Observed_____ Date_____

6. Verify MK 112 control unit is properly cocked.

Observed_____ Date_____

7. For OA-03B:
a. Verify spoiler has been tack welded to mine case in four places with 1/8″ by ¾″ long welds and that welds are not cracked.

Observed_____ Date_____